Agricultural Statistics for Rural Development

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ABSTRACT: Agricultural statistics programs typically focus on the production and sale of agricultural products. Thus, only units with farming activities are "in scope".

The farm population is declining relatively and absolutely in developed countries. Rural employment solutions will not come from agricultural development. Obtaining information for rural development via farm surveys will provide an increasingly narrow picture of rural society. Farm survey information will be most useful for rural analysis when it is presented in its rural context.

Some on-farm and within-farm-household diversification will increase rural employment. This should be measured early to allow policy analysts to understand the type of unit that "adopts" such diversification strategies. Proposals to encourage these strategies will benefit from this key information.

There is no special category of "rural statistics". The degree of rurality is a variable that should be included in all data sets. The challenge for a rural statistics program is to portray the data in each data set in a rural-friendly fashion. If an agricultural statistics agency were to develop a program to present national data in rural-friendly ways, an adjustment in thinking may be required for some staff. However, an agricultural statistics agency may be the only one with an interest to do the job.

1. Introduction

I think the conference organisers should be commended for assembling this group to ponder agricultural statistics in the year 2000.

I have the impression that we are all "supply-siders." We have a supply of agricultural statistics and we will search for any and every demand for our products and services. Note that the presentations this morning have been:

> Agricultural Statistics for Public Policy Issues,
> Agricultural Statistics for Private Sector and Global Marketing,
> Agricultural Statistics for Environmental Monitoring and Policy,
> Agricultural Statistics for Rural Development.

The titles of the presentations have **not** been:

> Public Policy Issues: the role of agricultural statistics,
> Private Sector and Global Marketing: the role of agricultural statistics,
> Environmental Monitoring and Policy: the role of agricultural statistics,
> Rural Development: the role of agriculture statistics.

As a lifelong member of the supply-side fraternity, I was pleased to be asked to introduce the issue of "Agricultural Statistics FOR Rural Development". As an economist, I would prefer to structure my remarks in terms of "Rural Development: the role of agricultural statistics."

[1] Denis Chartrand, Bob Cumming, Mark Elward, Tom Thibault and Mike Trant provided excellent comments on an earlier draft. The shortcomings are mine.

2. What is Rural?

Rural is space. Rural is distance and density. More generally, rural is part of the spectrum ranging from a high-density settlement pattern to a very sparse settlement pattern.

Rural is neither agriculture nor forestry nor mining nor fishing (but each of these sectors exist within rural space). However, these sectors tend to be "space intensive" in the sense that they use a lot of space. Mining and fishing often take place at considerable distances from metropolitan markets. Agriculture and forestry, in addition to often taking place at considerable distances from urban markets, also use a lot of space in production.

3. What is Development?

In my view, "development" is the generation and implementation of new ideas. Jane Jacobs, in her *The Economy of Cities*, wrote a convincing economic history of the world with the argument that "development" occurs in cities. She quotes Adam Smith who observed in 1776 that, although wages and rents were considerably lower in the north of the U.K., entrepreneurs preferred to settle in London because that was where the ideas (read: "development") were occurring.

An interesting exception appears to be the development (i.e. the generation and implementation) of the technology for air seeders (not to be confused with seeding from the air) in rural Saskatchewan — and rural Saskatchewan continues to lead in air seeder technology.

4. What is "Rural Development"?

Let me respond with an anecdote.

I attended a strategy session of the so-called Rural Development Secretariat within the Ontario Ministry of Agriculture, Food and Rural Affairs as they were pondering how to cope with government restructuring. As the day progressed and we were struggling to remain focussed, a "rural development specialist" proposed a parlour game. Each person was given five file cards and was asked to write the five words most associated with rural development. She then collected the cards, shuffled them, dealt them to the assembled group and we played rummy — you know, keep two cards and pass three cards to the player on the right.

I contributed only two cards to this game: **oxymoron** and **niche marketing**. If rural is "distance and low density" and if development is the generation of ideas which generally occurs in cities, then "rural development" is an oxymoron. If rural development is an oxymoron, the "developmental" opportunities in places challenged by "distance and density" is niche marketing — specifically:

- finding or making a product that will sell into a niche in a metropolitan market (which would be expected to be expanding because metropolitan populations are expanding), or
- finding or making a niche within your piece of "space and (low) density" that you can market/sell/rent to metropolitan consumers.

Thus, my view of "rural development" is the search for niche products and niche services, e.g. cross-country ski resorts or chocolate-flavoured maple syrup candies.

What ARE "rural statistics"?

In my view, there is not a specialised category called "rural statistics." Rather, there is the complete spectrum of social and economic (and demographic and environment and …) statistics distributed by degree of "distance and (low) density." To say the same thing, rural (or degree of rurality) is a variable in your data set; "rural statistics" do not constitute a specialised data set.

5. Potential for an Agricultural Statistics System to Provide Statistics for Rural Development

At the turn of this century, a large share of the rural population (regardless of one's definition of "rural") was involved in agriculture. In addition, in both Canada and the United States, a significant share or the rural population was involved in fishing, forestry and mining. Over time, the share of the rural population (however defined) involved in these primary sectors has declined. Bluntly, changes in agriculture have caused rural depopulation and neither agriculture nor fishing nor forestry nor mining will generate increases in rural employment. Thus, social investments in agriculture (i.e. agricultural subsidies) cannot be expected to generate employment or to stem rural depopulation. Rural development solutions will come from other sectors.

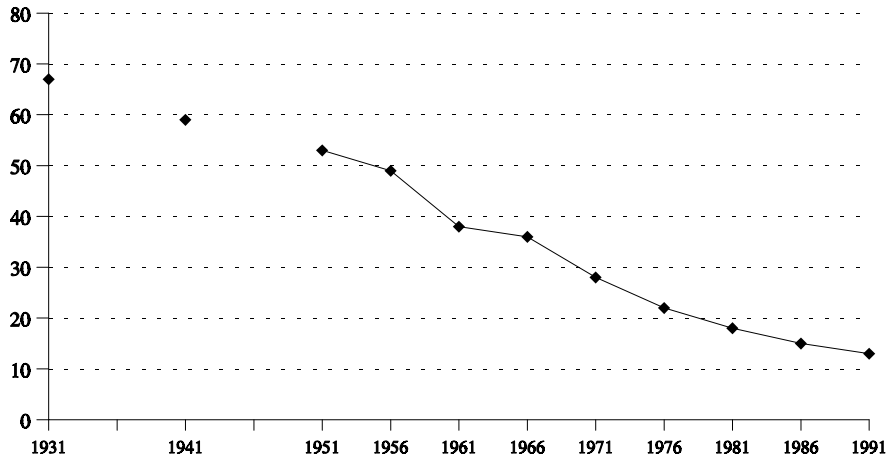
An agricultural statistics system offers two (and only two) potential entrées: (1) through observations of farmer households, and (2) through observations of farm businesses.

Before proceeding, "we" supply-siders in the agricultural statistics business must explicitly recognise that farmer households/farm businesses represent a declining share of rural (however defined) activity. One indicator will make the point — within the rural[2] population, the share of Canada's rural population living on census-farms has declined from 67 percent in 1931 to 13 percent in 1991 (Figure 1). The USA picture is similar. It would be much more fun to be selling your wares (i.e. your "rural-friendly" agricultural statistics program) into an expanding market. This is not the case in industrialised countries. Looking at rural issues through farmer households and farm businesses provides an ever-shrinking look at the rural economy. From a public policy point of view, rural policy analysts might (correctly, in my view) request a re-balancing of rural statistics from farmer households and farm businesses to rural non-farm households and rural non-farm businesses.

[2] In Canada, the "official rural" definition refers to individuals living outside centres of 1,000 or more and outside areas with a population density of 400 or more persons per square kilometre.

Figure 1. Farm Population Represents less than 15 percent of the Rural Population

Rural farm population(1) as percent of total rural population(2)



Source: Statistics Canada, CENSUSES OF POPULATION, 1931 to 1991

(1) The farm population refers to individuals living in the household of a census-farm operator. The definition of a census-farm operator has changed marginally over time, but essentially includes all holdings producing agricultural products for sale.

(2) The rural population refers to individuals living outside centres of 1,000 or more and outside centres with a population density of 400 persons per square kilometre.

Agricultural statistics systems have on-going vehicles to monitor farmer households and farm businesses. More emphasis on the linkages to various non-farm markets would appear to be in order.

The full range of important interrelationships has been documented and discussed elsewhere by numerous analysts, including Fuller and Bollman [1992]. The different market relationships include:

- the interrelationship of the farm business and the farm output market (including, for example, whether the buyers are “local” or “from away”);
- the interrelationship of the farm business to the farm input market (including, for example, whether the vendors are “local” or “from away”); with specific reference to
- the interrelationship of the farm business and the market for farm labourers; and
- the interrelationship of the farm business to the capital market(s); plus
- the interrelationship of the farmer household to the non-farm labour market (i.e. off-farm work by farm family members); and
- the interrelationship of the farmer household to the non-farm capital market.

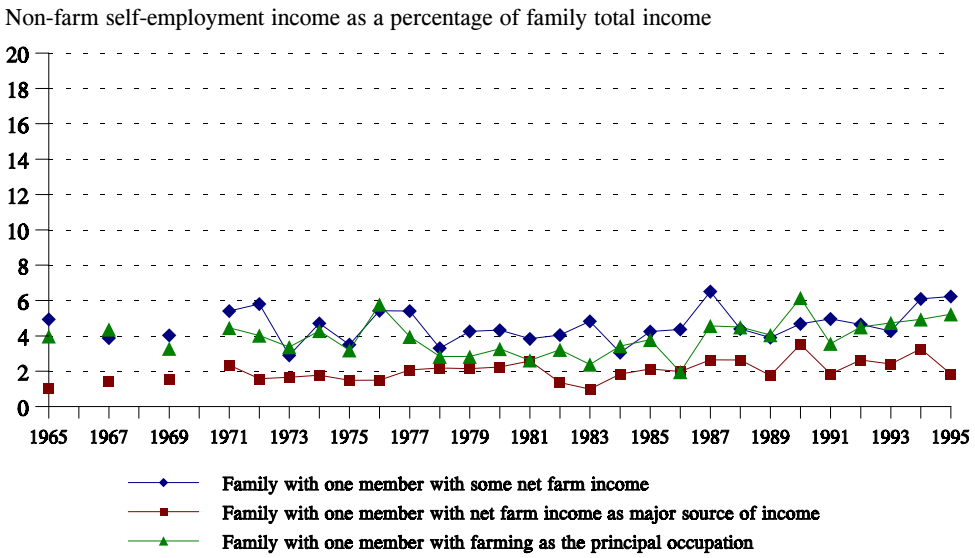
An understanding of these interrelationships will clarify the role of farm households and farm businesses within rural society. However, the specific data search should be for farm households and farm businesses pursuing niche products and niche services. These enterprises would be expected to generate jobs (i.e. rural development). An understanding of the characteristics of these enterprises can be generated from farm household and farm business surveys. If public policy wished to support these enterprises to increase rural employment, key information could be generated from the agricultural statistics system.

5.1 On the contribution to rural development by members of farm operator households who operate non-farm businesses

One topic not addressed in detail in previous studies is the operation of non-farm businesses by members of farming families. Are rural non-farm enterprises being operated by farming families? What is the contribution of entrepreneurs in farm households to rural entrepreneurship?

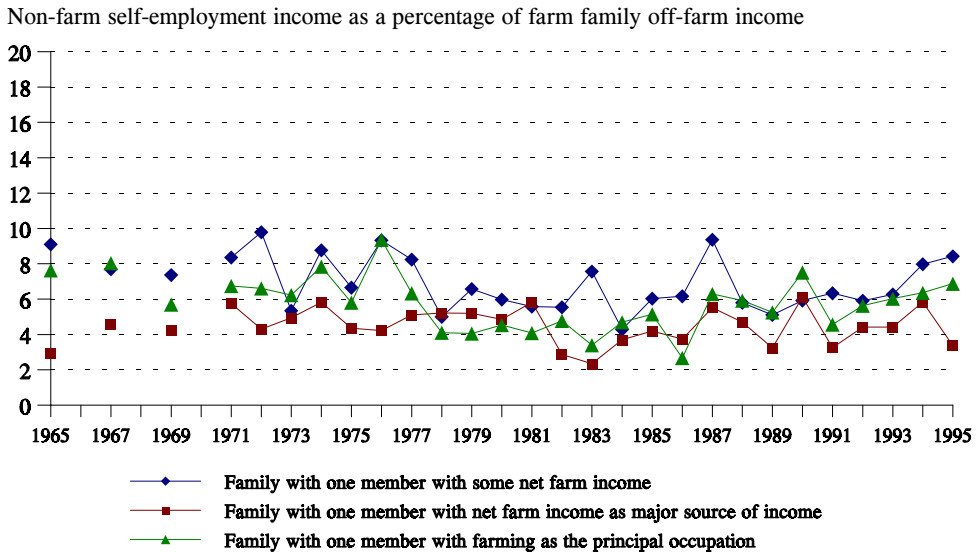
In Canada, within farming families, non-farm self-employment income contributes a small share of the total income of farm families. Over the 30-year period from 1965 to 1995, the share of total income from non-farm self-employment stayed constant in the 1 to 7 percent range, depending upon the definition of a farm family (Figure 2). As a share of off-farm income, non-farm self-employment also stayed constant, ranging from 3 to 10 percent, again depending upon the definition of farm family (Figure 3). Note that there is no discernible trend over 30 years. This data series shows a constant level and a low level of participation in non-farm self-employment. Farm families are not increasing or decreasing their participation in non-farm self-employment.

Figure 2. Non-farm Self-employment Provides a Constant and Low Share of Farm Income



Source: Statistics Canada, SURVEY OF CONSUMER FINANCES (unpublished tabulations)
Note: "Family" refers to "economic families" plus unattached individuals.

Figure 3. Non-farm Self-employment Provides a Constant and Low Share of Farm Family Off-farm Income



Source: Statistics Canada, SURVEY OF CONSUMER FINANCES (unpublished tabulations)
Note: "Family" refers to "economic families" plus unattached individuals.

The USA situation is similar. In 1979, only 6 percent of census-farm operator households (Table 1) and in 1987, only 9 percent of census-farm operator households (Table 2) reported income from a non-farm self-employment business or professional practice. Replicating the Canadian data, only 5 percent of household total net cash income and only 9 percent of off-farm income was generated by this source in both 1979 and 1987. Interestingly, the share of those operating a non-farm self-employment business was relatively flat across size classes of gross farm revenue and relatively flat across size classes of net cash income from agricultural sales. These data suggest that non-farm self-employment business or professional practice by farm household members is not a major activity of farming households. However, for the small share of households reporting a non-farm business, the average net income from the non-farm business ranges from $12,000 to $63,000, depending on the size of gross or net cash farm income.

Table 1. Non-farm self-employment business and non-farm professional practice by members of census-farm operator households, USA, 1979

	Number of census-farms	Total net cash income ($,000)	Households of operators of census-farms reporting some off-farm income								
			Off-farm income from any source			Non-farm self-employment business and non-farm professional practice					
			Number of households	As percent of all census-farms	Aggregate income ($,000)	Number of households	As percent of all census-farms	Aggregate income ($,000)	As percent of total off-farm income	As percent of total net cash income	Average per household reporting ($)
Value of agricultural products sold											
Less than $2,500	546,667	9,180,434	537,576	98	9,584,954	33,673	6	633,031	7	7	18,799
$2,500 to 4,999	326,277	5,463,964	316,558	97	5,308,438	24,502	8	390,899	7	7	15,954
$5,000 to 9,999	302,512	5,444,620	291,073	96	4,880,923	22,914	8	439,670	9	8	19,188
$10,000 to 19,999	270,845	5,006,352	253,835	94	3,919,197	15,692	6	393,360	10	8	25,068
$20,000 to 39,999	257,919	5,012,896	228,909	89	2,783,966	13,846	5	281,640	10	6	20,341
$40,000 to 99,999	373,676	9,789,788	308,071	82	3,300,278	19,117	5	408,878	12	4	21,388
$100,000 to 199,999	173,737	7,120,882	141,815	82	1,579,570	8,213	5	176,293	11	2	21,465
$200,000 to 499,999	78,702	5,512,093	65,071	83	877,154	3,987	5	87,437	10	2	21,931
$500,000 or more	23,890	7,451,527	20,863	87	519,707	1,233	5	63,234	12	1	51,285
All census-farms	2,354,225	59,982,556	2,163,771	92	32,754,187	143,177	6	2,874,442	9	5	20,076

Source: U.S. Department of Commerce (1979), SURVEY OF AGRICULTURAL FINANCE

Table 2. Non-farm self-employment business and non-farm professional practice by members of census-farm operators households, USA, 1987

	Number of census-farms	Total net cash income ($,000)	Households of operators of census-farms reporting some off-farm income								
			Off-farm income from any source			Non-farm self-employment business and non-farm professional practice					
			Number of households	As percent of all census-farms	Aggregate income ($,000)	Number of households	As percent of all census-farms	Aggregate income ($,000)	As percent of total off-farm income	As percent of total net cash income	Average per household reporting ($)
Market value of agricultural products sold											
Less than $2,500	435,320	10,100,286	326,180	75	11,396,445	45,617	10	1,153,887	10	11	25,295
$2,500 to 4,999	206,056	5,004,879	158,756	77	5,258,858	17,197	8	318,530	6	6	18,522
$5,000 to 9,999	223,669	5,053,382	174,152	78	5,289,893	24,365	11	461,769	9	9	18,952
$10,000 to 24,999	299,698	8,044,586	229,279	77	6,862,982	22,414	7	423,718	6	5	18,904
$25,000 to 49,999	206,146	7,048,424	157,034	76	4,833,350	18,671	9	511,249	11	7	27,382
$50,000 to 99,999	201,553	8,082,584	144,277	72	3,496,043	14,960	7	307,578	9	4	20,560
$100,000 to 249,999	207,984	12,516,470	143,994	69	2,922,309	15,340	7	324,906	11	3	21,180
$250,000 to 499,999	68,569	7,201,631	47,559	69	1,221,205	6,165	9	131,308	11	2	21,299
$500,000 to 999,999	20,072	3,190,428	12,522	62	406,518	1,486	7	43,912	11	1	29,550
$1,000,000 or more	10,500	7,010,686	5,067	48	245,554	706	7	44,558	18	1	63,113
All census-farms	1,879,567	73,253,356	1,398,820	74	41,933,157	166,921	9	3,721,415	9	5	22,294
Net cash income from agricultural sales											
Less than -$24,999	60,086	15,338	46,256	77	2,660,324	7,852	13	336,693	13	2,195	42,880
-$24,999 to -10,000	122,902	3,659,066	104,257	85	4,600,075	18,514	15	750,824	16	21	40,554
-$9,999 to -1,000	526,277	12,592,737	412,617	78	13,665,257	48,325	9	910,589	7	7	18,843
-$999 to -1	155,067	3,662,085	112,781	73	3,571,286	11,179	7	206,003	6	6	18,428
$1 to 999	124,188	2,817,279	92,759	75	2,575,905	10,838	9	134,767	5	5	12,435
$1,000 to 9,999	418,299	10,612,390	305,187	73	7,526,556	39,003	9	715,790	10	7	18,352
$10,000 to 24,999	221,603	8,897,257	156,646	71	3,668,352	13,408	6	266,124	7	3	19,848
$25,000 to 49,999	127,825	7,708,097	90,749	71	1,868,380	8,796	7	213,502	11	3	24,273
$50,000 to 99,999	75,238	7,367,283	49,008	65	947,876	5,473	7	90,908	10	1	16,610
$100,000 or more	48,082	15,921,823	28,560	59	849,144	3,533	7	96,213	11	1	27,233
All census-farms	1,879,567	73,253,355	1,398,820	74	41,933,155	166,921	9	3,721,413	9	5	22,294

Source: U.S. Department of Commerce (1990), AGRICULTURAL ECONOMICS AND LAND OWNERSHIP SURVEY

The Canadian Farm Financial Survey asks if the operator or family member operates a non-farm business. These data show a slightly higher proportion with a non-farm business — 12 or 13 percent in 1993 and 1995 (Table 3). Note that this question refers to a non-farm business, regardless of whether it is unincorporated or incorporated — thus, these data should be a bit higher than the previous Canadian data that enumerate unincorporated non-farm self-employment income received by farming households. As an indicator of the level of activity, the magnitude of the assets in the non-farm business amounts to only 4 percent of the magnitude of assets in the farm business, on average.

Table 3. Percent of farm operator families operating a non-farm business, Canada, 1993 and 1995

Size class of gross farm revenue	Number of farms (,000)	Aggregate assets ($billion)	Operators or family members operating a non-farm business			
			Number of farms (,000)	As percent of total	Aggregate assets of non-farm business ($billion)	As percent of farm assets
1993						
$2,000 to 24,999	87	22.8	14	16	2.4	11
$25,000 to 49,999	41	14.5	5	12	0.8	5
$50,000 to 99,999	46	22.4	5	11	0.8	3
$100,000 to 249,999	56	43.9	5	9	0.9	2
$250,000 or more	23	40.3	2	8	0.9	2
All farms	254	143.8	31	12	5.7	4
1995						
$2,000 to 24,999	84	23.3	15	18	2.5	11
$25,000 to 49,999	39	14.2	5	14	0.5	4
$50,000 to 99,999	42	22.0	6	14	1.2	5
$100,000 to 249,999	56	46.3	5	8	0.9	2
$250,000 or more	30	52.3	2	8	1.1	2
All farms	251	158.1	33	13	6.2	4

Source: Statistics Canada (1993, 1995), FARM FINANCIAL SURVEY (unpublished tabulations)

Results from the 1996 Canadian Census of Agriculture are consistent with these findings. In 1996, 15 percent of all operators (the census enumerated 386,000 operators on 276,000 census-farms) responded “yes” to the question: “In 1995, did this person operate another business (other than farming)?” (Table 4). The proportion ranged from 20 percent of operators associated with smaller farms to 9 percent of operators associated with larger farms.

Table 4. Number of Census-farm Operators who "operate another business (other than farming)", Canada, 1996

Size class of gross farm revenue	Number of census-farms[1]	All operators of census-farms[1]						
		Number of operators	Number who "operate another business (other than farming)"					
			Total reporting "another business"	Type of business				
				Sales	Services	Construction	Manufacturing	Other
	number							
less than $2,000	18,940	25,235	5,640	1,250	2,815	1,110	475	385
$2,000 to 24,999	94,670	124,825	24,545	5,395	12,225	4,835	1,785	1,840
$25,000 to 49,999	37,750	49,595	7,865	1,845	3,870	1,495	585	600
$50,000 to 99,999	42,050	56,420	7,395	1,860	3,585	1,325	550	540
$100,000 to 249,999	55,200	81,970	8,230	2,390	3,925	1,240	720	545
$250,000 or more	27,940	47,565	4,335	1,480	1,980	520	465	200
All census-farms	276,550	385,610	58,010	14,220	28,400	10,525	4,580	4,110
	as percent of all operators							
less than $2,000		100	22	5	11	4	2	2
$2,000 to 24,999		100	20	4	10	4	1	1
$25,000 to 49,999		100	16	4	8	3	1	1
$50,000 to 99,999		100	13	3	6	2	1	1
$100,000 to 249,999		100	10	3	5	2	1	1
$250,000 or more		100	9	3	4	1	1	0
All census-farms		100	15	4	7	3	1	1

Source: Statistics Canada, 1996 CENSUS OF AGRICULTURE (unpublished tabulations)

[1] Operators of proprietorship, partnership and family corporations are included. Operators of non-family corporations and "other" (institutions, Hutterite, estates, etc.) census-farms are excluded.

Data from the USDA Farm Costs and Returns Survey (FCRS) indicate that 14 to 21 percent of farm operator households reported off-farm business income in the 1988 to 1995 period (Table 5). Interestingly, the USDA FCRS data suggest that between 13 and 27 percent of household income was derived from off-farm businesses during this period. According to this data source, off-farm businesses operated by farm operator household members are a major contributor to farm family income. The exact question for the 1995 data was,

… net cash income from OPERATING any other business?

This would appear to refer to any off-farm business and not strictly to unincorporated non-farm self-employment income. In most income accounts, unincorporated non-farm self-employment income would be reported as income by the proprietor (or partners). However, the income generated by a corporation would only appear as the income of an individual if it were received as wages or as dividends, or sometimes the individual may be employed by his or her corporation as a self-employed contractor. In all these cases, the corporation may generate profits that are not paid to an individual. Only part of the earnings would be received by individuals and the remaining earnings are retained earnings for the corporation. Although the retained earnings represent an increase in wealth for the shareholders, in most accounting frameworks, the retained earnings are not counted as income by individuals. Note that with the question above, there would appear to be a possibility that total earnings of a non-farm corporation would be reported, even if not all the earnings accrued to an individual. Thus, the reported income may be expected to be larger than individuals would report as the income paid to them. In addition, the net off-farm business income from this source may be higher than reported in other sources because the question implies a "cash income" calculation, which may generate a response that excludes an allowance for depreciation.

Table 5. Off-farm Business Income by Farm Operator Households, USA, 1988 to 1994

Farm Size by Gross Value of Sales	Number of households (,000)	Average household income (all sources) ($,000)	Average farm income to the household ($,000)	Average off-farm income (all sources) ($,000)	Percent reporting some off-farm income	Off-farm business income				
						Average per household ($,000)	As percent of household income	As percent of off-farm income	Percent reporting off-farm business income	Average per household reporting ($,000)
1988										
Less than $50,000	1,256	29	-3	32	93	10	34	30	17	59
$50,000 to 249,999	393	33	13	20	82	6	19	32	15	43
$250,000 to 499,999	68	57	37	20	75	9	15	42	17	52
$500,000 and over	32	143	113	29	68	15	10	50	14	103
All farm households	1,749	33	4	29	89	9	27	31	16	56
1989										
Less than $50,000	1,255	26	-3	29	91	6	24	21	15	42
$50,000 to 249,999	363	34	17	17	79	5	14	27	13	36
$250,000 to 499,999	66	59	43	16	78	5	9	32	14	36
$500,000 and over	31	195	162	33	62	18	9	54	15	118
All farm households	1,715	32	6	26	87	6	19	23	14	42
1990										
Less than $50,000	1,249	34	-3	37	96	9	25	23	18	48
$50,000 to 249,999	382	38	16	22	83	4	11	19	13	33
$250,000 to 499,999	72	79	53	26	79	6	8	24	14	45
$500,000 and over	35	151	118	33	73	12	8	36	18	65
All farm households	1,738	39	6	33	92	8	19	23	17	46
1991										
Less than $50,000	1,518	34	-2	36	95	10	28	27	23	42
$50,000 to 249,999	458	33	14	19	83	4	14	23	17	26
$250,000 to 499,999	68	71	47	24	79	5	7	22	16	33
$500,000 and over	37	178	143	34	74	10	5	28	17	58
All farm households	2,080	37	6	32	91	8	22	26	21	39
1992										
Less than $50,000	1,524	39	-2	40	97	8	22	21	17	50
$50,000 to 249,999	444	42	20	22	85	6	14	26	14	40
$250,000 to 499,999	67	65	46	20	80	5	7	23	16	25
$500,000 and over	38	193	149	43	72	18	9	42	17	105
All farm households	2,072	43	7	36	93	8	18	22	15	48
1993										
Less than $50,000	1,498	36	-3	38	98	6	18	17	16	39
$50,000 to 249,999	428	41	15	27	87	8	19	29	12	65
$250,000 to 499,999	68	66	41	25	85	4	6	16	15	28
$500,000 and over	41	153	120	33	81	11	7	32	13	83
All farm households	2,036	40	4	35	95	7	17	19	15	44
1994										
Less than $50,000	1,457	38	-4	42	96	8	21	19	18	45
$50,000 to 249,999	426	41	12	29	89	5	13	18	14	36
$250,000 to 499,999	70	73	50	22	84	2	2	8	8	21
$500,000 and over	43	156	140	36	77	9	6	25	13	71
All farm households	1,997	42	4	38	94	7	17	19	15	43
1995										
Less than $50,000	1,515	40	-3	43	97	6	16	14	16	38
$50,000 to 249,999	408	41	11	29	88	5	12	16	13	35
$250,000 to 499,999	72	72	43	29	84	4	6	15	14	33
$500,000 and over	43	196	165	31	81	7	3	21	14	47
All farm households	2,037	44	5	40	95	6	13	15	15	38

Sources: Ahearn *et al*. (1993), USDA, FARM COSTS AND RETURNS SURVEYS

To summarise,

- about 15 percent of farming families in Canada and the United States have one member who operates a non-farm business;
- depending upon how the question is asked, 5 to 20 percent of farm family income in Canada and the United States is generated by a non-farm business; but interestingly and perhaps not surprisingly,
- the share of farming families who operate a non-farm business *does **not** appear to be increasing* over time.
- However, farming families with a non-farm business do create rural jobs.
- Thus, rural policy analysts who wish to promote rural job creation would benefit from information on the characteristics of these farming families.

5.2 What statistics are required for an analysis of rural development?

So, if not via an "agricultural statistics" program, what are the rural statistics requirements?

Local entrepreneurs (farmers and non-farmers) want to know:

a) What niche product or service will be in demand *tomorrow*?
b) What will be the price *tomorrow*?
c) What will be the weather *tomorrow*?

Satisfying the demand for information on the first two points requires market research. Admittedly, this research is based on baseline structural data on socio-demographic characteristics, often from a Census of Population. In addition, special surveys, often by private polling companies, are required in order to understand the buying preferences of each socio-demographic group.

Local development organisations desiring to stimulate local job growth via entrepreneurship need:

d) information in "a" above to aid the entrepreneur (whether a homegrown entrepreneur or an imported entrepreneur) in his/her market research, and

e) a profile of local advantages to entice homegrown entrepreneurs to stay or to entice mobile entrepreneurs to arrive. Examples of items in this profile would be:

    - availability of clean water,
    - facilities to treat waste,
    - access to transportation corridors and airports,
    - availability of subsidies,
    - features of labour-management relations,
    - rental rates for buildings,
    - tax rates, and
    - availability of a skilled workforce — finally, a variable potentially available from a government statistical agency!

Note that almost none of these information requirements are the typical products of government statistical agencies.

6. Implications for "Agricultural Statistics" Agencies

"Agricultural statistics" agencies can easily document the problem that agricultural development causes for rural development advocates. Finding a statistical program to illuminate potential solutions is more difficult.

Are there "learnings" from the so-called developed countries for developing countries? The experience in developed countries is that many former on-farm activities moved off-farm to more "efficient" production facilities. The long run trend in the increasing value of human time [Schultz 1972], which has resulted in substantive increases in human well-being, has also caused the substitution of capital for labour in primary sector (agriculture, logging, fishing, mining and oil extraction) production. The production of many inputs such as horsepower and fuel has moved off-farm. The processing of many farm commodities (e.g. butter and cheese) has also moved off-farm. These production facilities are often located in urban locations. It is unclear whether there was a viable policy alternative that would have given us a higher level of population in agriculturally dependent communities. Should we have focussed public research on labour-intensive technologies? It is unclear whether the agricultural statistics program in developing countries might be changed to support an analysis of policy alternatives if such alternatives are not specified.

Today's growth in demand for organic products, for flowers and nursery products, and for exotic products (e.g. ginseng, bison steaks, emu meat, etc.) is causing a (micro) growth in (micro) labour-intensive sectors. I am back to my original question, "Did we have a viable policy alternative that would have given us more population per hectare in agriculturally dependent communities?"

7. Summary and Conclusions

To summarise, agricultural statistics programs typically focus on the production and sale of agricultural food and fibre (e.g. cotton) products. Thus, only units with farming activities are "in scope" for a typical agricultural statistics program.

The farm population is declining relatively *and* absolutely in developed countries. Rural employment solutions are not going to come from agricultural development. Obtaining rural development statistics via farm business surveys and farm households surveys will provide a narrower and narrower picture of rural society over time.

Some on-farm diversification (e.g. emus) or within-farm-household diversification (e.g. bed and breakfasts or off-farm businesses) will increase employment. The structure and trends of such diversification activities should be enumerated and tabulated as early as possible — even though only a few observations might be expected. This will allow policy makers to understand the type of household or farm that "adopts" these so-called diversification strategies. If public policy wishes to encourage these strategies to increase rural employment, these observations would provide key information for policy action.

A more general requirement for any agricultural statistics agency is to provide the farm household and the farm business statistics *in the context of* and *in a comparable fashion to* the overall rural society. This demands that concepts and definitions be consistent with the concepts and definitions used in other sectors. Problematic measures in Canada have been net farm income, farm family income, the definition of a farm business, farm injury statistics, loss of land from agriculture, the contribution of agriculture to the economy, etc. Information on farm households and farm businesses is not useful in

isolation because farm households and farm businesses represent a small share of rural society in industrialised countries.

There is no special category of "rural statistics". The degree of rurality (or distance or density) is a variable that should be included in all data sets. The challenge for a rural statistics program is to assemble and to portray the data in each data set in a rural-friendly fashion. If an agricultural statistics agency were to develop a program to present national data in rural-friendly ways, it may require an adjustment in thinking for some staff in an agricultural statistics agency. However, an agricultural statistics agency may be the only one with an interest to do the job.

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